AMENDMENTS TO THE CLAIMS

For the convenience of the Examiner, all claims have been presented whether or not an amendment has been made. The claims have been amended as follows:

1.   **(Currently Amended)** A method for tuning a transconductor, comprising:

receiving a digital value;

determining a bit value for a selected bit of the digital value;

selecting a tuning range for a transconductor based on the bit value; and

tuning the transconductor within the selected range based on any remaining bits in the digital value **by:**

  selecting an additional bit of the digital value; and

  selecting a subrange within the range based on the value of the additional bit.

2.   **(Original)** The method of Claim 1, wherein selecting the tuning range comprises selecting a resistor from a plurality of resistors.

3.   **(Original)** The method of Claim 1, wherein tuning the transconductor comprises:

converting the remaining bits into an analog signal; and

tuning the transconductor based on the analog signal.

4.   **(Cancelled)**

5.   **(Original)** The method of Claim 1, wherein:

the transconductor comprises a first transconductor and a second transconductor;

selecting the tuning range comprises selecting a gain for the first transconductor and a gain range for the second transconductor; and

tuning the transconductor comprises:

  producing an output current of the transconductor using an output current of the first transconductor and an output current of the second transconductor; and

tuning a gain of the second transconductor within the gain range based on the remaining bits of the digital value.

6. **(Original)** The method of Claim 1, wherein the transconductor is used to form a selected one of a filter, amplifier, mixer, integrator, or charge pump.

7.   **(Original)** A transconductor circuit, comprising:

a digital-to-analog module operable to receive a digital value and to determine a bit value for a selected bit of the digital value;

a digital control module operable to select a tuning range for a transconductor based on the bit value; and

an analog control module operable to tune the transconductor within the selected range based on any remaining bits in the digital value;

wherein:

the digital-to-analog module is further operable to select an additional bit of the digital value; and

the digital control module is further operable to select a subrange within the range based on the value of the additional bit.

8.   **(Original)** The circuit of Claim 7, wherein the digital control module is further operable to select the tuning range by selecting a resistor from a plurality of resistors.

9.   **(Original)** The circuit of Claim 7, wherein:

the digital-to-analog module is further operable to convert the remaining bits into an analog signal; and

the analog control module is further operable to tune the transconductor based on the analog signal.

10.   **(Cancelled)**

11.   **(Original)** The circuit of Claim 7, wherein:

the transconductor comprises a first transconductor and a second transconductor, each transconductor producing a respective output current, wherein an output current of the transconductor is produced using the output currents of the first and second transconductors;

the digital control module is further operable to select the tuning range by selecting a gain for the first transconductor and a gain range for the second transconductor;

the analog control module is further operable to tune a gain of the second transconductor within the gain range based on the remaining bits of the digital value.

12.　　**(Original)**　The circuit of Claim 7, wherein the transconductor is used to form a selected one of a filter, amplifier, mixer, integrator, or charge pump.

13.   (Original) A circuit, comprising:

a first transconductor;

a second transconductor coupled to the first transconductor such that the first and second transconductors are operable to produce a combined output current from respective output currents of the first and second transconductors;

a digital-to-analog module operable to:

   receive a digital value;

   extract one or more bits from the digital value; and

   convert the remaining bits of the digital value into an analog signal;

a digital control module operable to:

   receive the one or more bits as a digital signal; and

   select a gain for the first transconductor and a gain range for the second transconductor based on the digital signal; and

an analog control module operable to:

   receive the analog signal; and

   tune a gain of the second transconductor within the gain range based on the analog signal.

14.   (Original) The circuit of Claim 13, wherein the digital control module selects a gain for the first transconductor and a gain range for the second transconductor at least in part based on a selected bit of the digital signal.

15.   (Original) The circuit of Claim 13, wherein the digital control module selects the gain of the first transconductor and the gain range of the second transconductor by selecting one of a plurality of resistors.

16.   (Original) The circuit of Claim 13, wherein the circuit is used to form a selected one of a filter, amplifier, mixer, integrator, or charge pump.

17.   **(Original)** Software embodied in a computer readable medium **and when executed** operable to perform ~~the steps of~~:

receiving a digital value;

determining a bit value for a selected bit of the digital value;

selecting a tuning range for a transconductor based on the bit value; and

tuning the transconductor within the selected range based on any remaining bits in the digital value **by:**

> **selecting an additional bit of the digital value; and**
>
> **selecting a subrange within the range based on the value of the additional bit**.

18.   **(Original)** The software of Claim 17, wherein selecting the tuning range comprises selecting a resistor from a plurality of resistors.

19.   **(Original)** The software of Claim 17, wherein tuning the transconductor comprises:

converting the remaining bits into an analog signal; and

tuning the transconductor based on the analog signal.

20.   **(Cancelled)**

21.   **(Original)** The software of Claim 17, wherein:

the transconductor comprises a first transconductor and a second transconductor;

selecting the tuning range comprises selecting a gain for the first transconductor and a gain range for the second transconductor; and

tuning the transconductor comprises:

> producing an output current of the transconductor using an output current of the first transconductor and an output current of the second transconductor; and
>
> tuning a gain of the second transconductor within the gain range based on the remaining bits of the digital value.

22. **(Original)** The software of Claim 17, wherein the transconductor is used to form a selected one of a filter, amplifier, mixer, integrator, or charge pump.

23.   **(Original)** A system, comprising:

means for receiving a digital value;

means for determining a bit value for a selected bit of the digital value;

means for selecting a tuning range for a transconductor based on the bit value; and

means for tuning the transconductor within the selected range based on any remaining bits in the digital value**;**

wherein:

the means for determining further determines an additional bit of the digital value; and

the means for selecting further selects a subrange within the range based on the value of the additional bit.